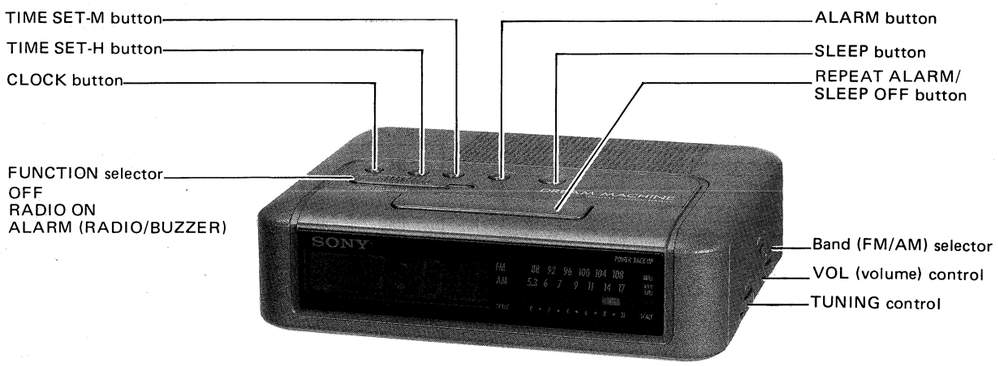
ICF-C240

SERVICE MANUAL

AEP Model



SPECIFICATIONS

Frequency range

	FM	AM
AEP model	87.6–107.5MHz	531–1,602kHz
IT model	87.5–108MHz	526.5–1,606.5kHz

Antenna	FM: AC power cord antenna AM: Built-in ferrite bar antenna
Speaker	Approx. 6.6 cm (2⅝ inches) dia.
Power output	100mW (at 10% harmonic distortion)
Power requirement	220V AC, 50Hz For the power backup function: 9V DC, one 6F22 battery
Battery life	Approx. 80 hours, using Sony battery S-006P (U)
Dimensions	Approx. 181.5x59x144mm (w/h/d) (7¼ x 2⅜ x 5¾ inches) incl. projecting ports and controls
Weight	Approx. 520g (1 lb 3oz) not incl. battery

Design and specifications subject to change without notice.

FEATURES

- Electronic digital alarm clock and sleep timer are combined.
- Two wake-up modes available: radio or buzzer alarm.
- REPEAT ALARM bar, operable with a feather-light touch, offers two functions: snooze alarm and sleep timer turn off.
- Power back-up function to keep the clock operating during a power interruption, using an optional 6F22 battery.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

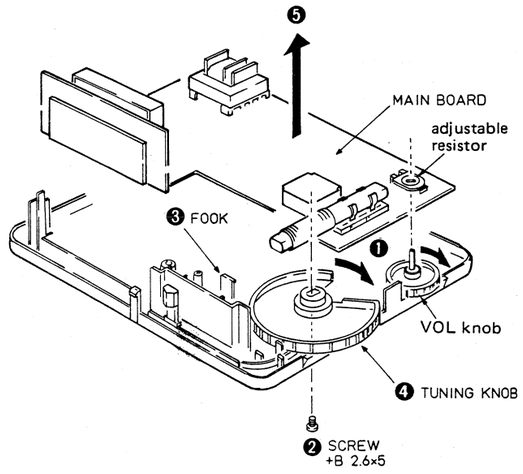
MICROFILM

IT model: Italian model

MAIN BOARD REMOVAL

1. Turn TUNING knob fully clockwise.
2. Remove screw (+B 2.6X5)
3. Release fook.
4. Remove main board pressing down TUNING knob.

Note: When installing main board, align shaft of VOL knob with a hole of adjustable resistor.

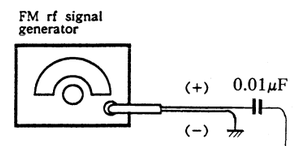


FM/AM DIGITAL CLOCK RADIO

SONY®

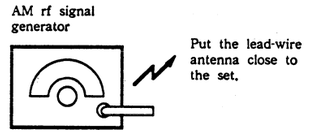
SECTION 1
ELECTRICAL ADJUSTMENTS

FM Section

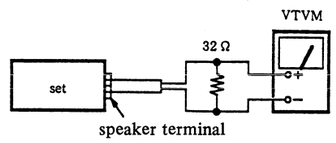


±22.5kHz frequency deviation by 400Hz signal output level : as low as possible

AM Section



400Hz, 30% AM modulation
Output level : as low as possible



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L4	87.35(87.3)MHz
CT2	108.05(108.3)MHz

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L5, L6	87.35(87.3)MHz
CT1	108.05(108.3)MHz

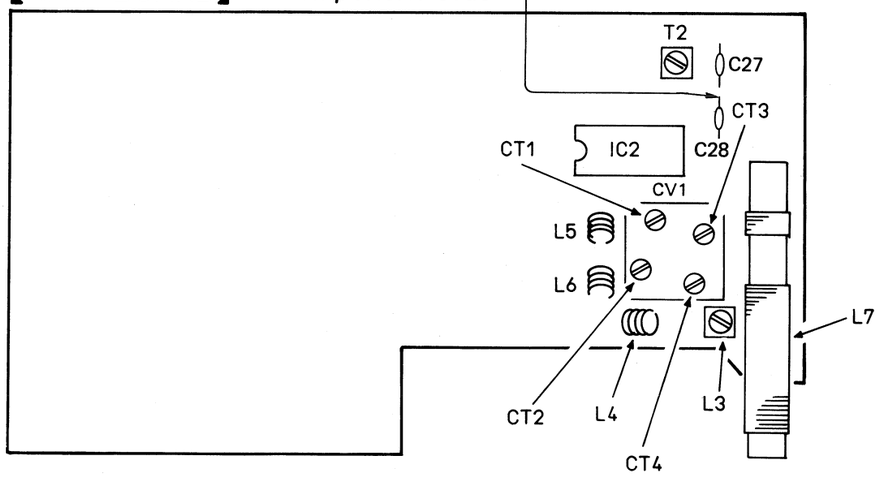
( ): IT model

AM IF ALIGNMENT
Adjust for a maximum reading on VTVM.
T2
455kHz

AM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L3	520(516.5)kHz
CT4	1,650(1,631.5)kHz

AM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VTVM.	
L7	620kHz
CT3	1,400kHz

【MAIN BOARD】 - component side -



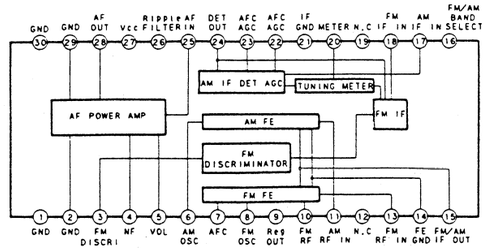
SECTION 2
DIAGRAMS

2-1. PRINTED WIRING BOARDS

D6
LED DISPLAY

【 MAIN BOARD. 】

• IC Block Diagram
IC2 CXA1019S



Note:

- ○——: parts extracted from the component side.
- ⊏⊢ indicates side identified with part number.
- ▨: Pattern on the side which is seen.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D1	C-2	D8	C-4
D2	C-2		
D3	E-4	IC1	B-3
D4	D-4	IC2	D-6
D5	D-4		
D6	A-3	Q1	C-6
D7	C-3	Q2	E-5

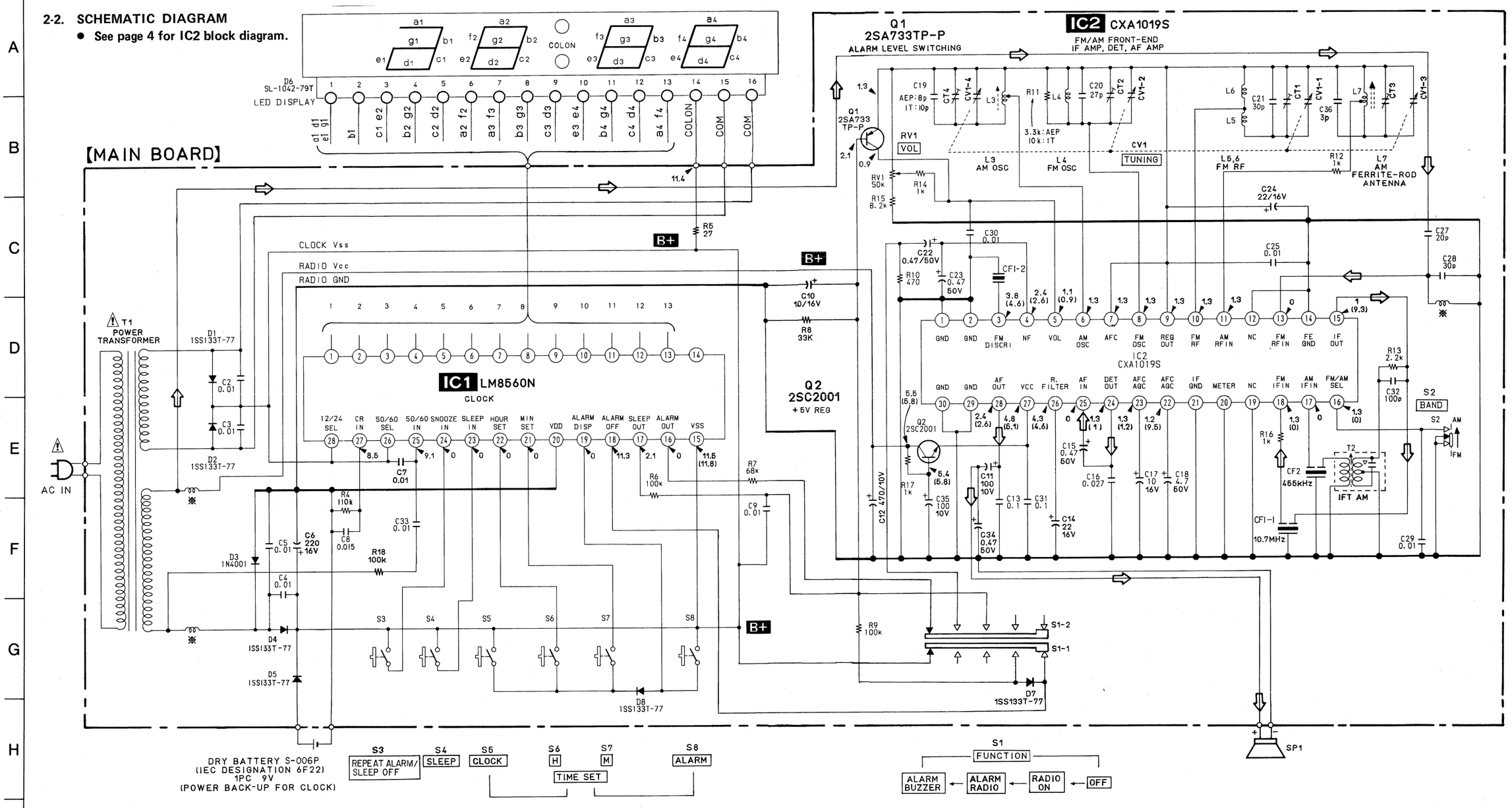
L7
AM FERRITE-ROD ANTENNA

REPEAT ALARM /SLEEP OFF
RADIO ON
OFF
ALARM RADIO
ALARM BUZZER
S1 FUNCTION
CLOCK
H
TIME SET
M
ALARM
SLEEP
CVI TUNING
AM
BAND
FM
RV1 VOL
T1 POWER TRANSFORMER
AC IN
DRY BATTERY S-006P
(IEC DESIGNATION 6F22)
IPC 9V
(POWER BACK-UP FOR CLOCK)
(KEEP THE CORRECT TIME DURING POWER STOPAGE)
RED
BLK
SP1

22

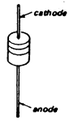
2-2. SCHEMATIC DIAGRAM

● See page 4 for IC2 block diagram.

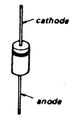


● SEMICONDUCTOR LEAD LAYOUTS

1SS119



10E2



2SA1175-HFE

2SC2001-K2

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety. Replace only with part number specified.

- IT model: Italian model.
- ※: Printed pattern functions as a kind of coil.
- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- Δ : internal component.
- B+ : B+ lines.
- Voltage and waveforms are dc with respect to ground under detuned conditions.
  no mark : FM
  ( ) : AM
- Voltages are taken with a VOM. (input impedance 10 MΩ) Voltage variations may be noted due to normal production tolerances.
- Signal path.
  ⇨ : FM

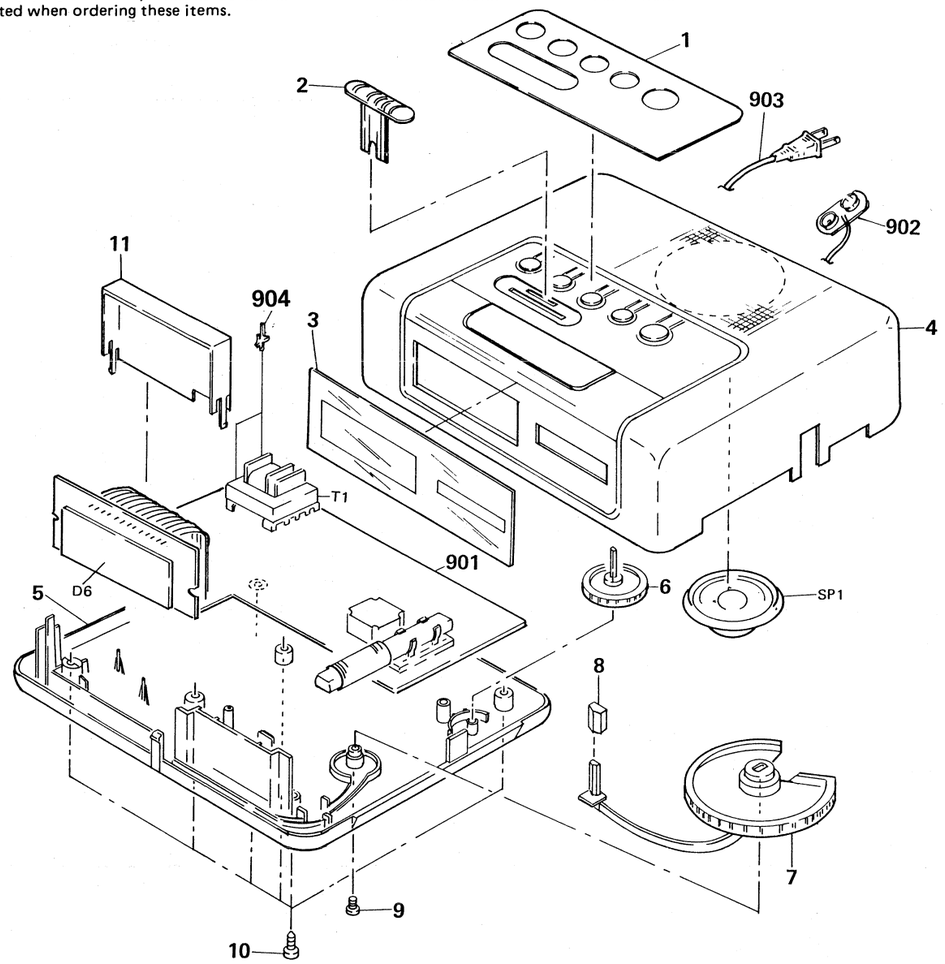
SECTION 3
EXPLODED VIEW

NOTE:

- The mechanical parts with no reference number in the exploded views are not supplied.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part number suffix -XX and -X may be different from the parts specified in the components used on the set.
- Color Indication of Appearance Parts
  Example:
  (RED) . . . KNOB, BALANCE (WHITE)
  ↑ Cabinet's Color ↑ Parts Color

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- IT model: Italian model



No.	Part No.	Description	Remarks
1	3-902-093-51	(WHITE)...PLATE, ORNAMENTAL	
	3-902-093-61	(GRAY)....PLATE, ORNAMENTAL	
	3-902-093-71	(BLACK)...PLATE, ORNAMENTAL	
2	3-902-092-01	(WHITE)...KNOB (FUNCTION)	
	3-902-092-21	(GRAY)....KNOB (FUNCTION)	
	3-902-092-32	(BLACK)...KNOB (FUNCTION)	
3	3-902-090-11	(AEP)...SCALE, DIAL	
	3-902-090-31	(IT)....SCALE, DIAL	
4	3-902-097-01	(WHITE)...CABINET (UPPER)	
	3-902-097-21	(GRAY)....CABINET (UPPER)	
	3-902-097-31	(BLACK)...CABINET (UPPER)	
5	3-903-139-31	(WHITE)...CABINET (LOWER)	
	3-903-139-41	(GRAY)....CABINET (LOWER)	
	3-903-139-51	(BLACK)...CABINET (LOWER)	
6	3-902-091-01	(GRAY,BLACK)....KNOB (VOL)(GRAY)	
	3-902-091-11	(WHITE)...KNOB (VOL)(LIGHT GRAY)	
7	3-902-474-01	(GRAY,BLACK)....KNOB (TUNING)(GRAY)	
	3-902-474-11	(WHITE)...KNOB (TUNING)(LIGHT GRAY)	
8	*3-902-463-01	CAP (POINTER)	
9	7-621-775-20	SCREW +B 2.6X5	
10	7-685-648-79	SCREW +BTP 3X12 TYPE2 N-S	
11	3-902-094-02	STOPPER (REPEAT ALARM BAR)	
901	*A-3615-360-A	(IT)....MOUNTED PCB, MAIN	
	*A-3615-361-A	(AEP)...MOUNTED PCB, MAIN	
902	1-535-804-21	SNAP, BATTERY	
903	⚠1-555-795-00	CORD, POWER	
904	1-535-476-11	TERMINAL	
D6	1-808-344-11	DIODE SL-1042-79T	
SP1	1-503-082-00	SPEAKER	
T1	⚠1-449-940-11	TRANSFORMER, POWER	

SECTION 4
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- Items marked "★" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- If there are two or more same circuits in a set such as a stereophonic machine, only typical circuit parts may be indicated and capacitors and resistors in other same circuits may be omitted.

CAPACITORS:
MF: μF, PF: μμF.

RESISTORS
- All resistors are in ohms.
- F: nonflammable

COILS
- MMH: mH, UH: μH

SEMICONDUCTORS
In each case, U: μ, for example:
UA...: μA..., UPA...: μPA..., UPC...: μPC, UPD...: μPD...

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- IT model: Italian model

Ref.No.	Part No.	Description			
901	*A-3615-360-A	(IT)....MOUNTED PCB, MAIN			
	*A-3615-361-A	(AEP)...MOUNTED PCB, MAIN			
902	1-535-804-21	SNAP, BATTERY			
903	⚠1-555-795-00	CORD, POWER			
904	1-535-476-11	TERMINAL			
C2	1-101-004-00	CERAMIC	0.01MF		50V
C3	1-101-004-00	CERAMIC	0.01MF		50V
C4	1-101-004-00	CERAMIC	0.01MF		50V
C5	1-101-004-00	CERAMIC	0.01MF		50V
C6	1-124-120-11	ELECT	220MF	20%	16V
C7	1-101-004-00	CERAMIC	0.01MF		50V
C8	1-130-485-00	MYLAR	0.015MF	5%	50V
C9	1-161-379-00	CERAMIC	0.01MF	30%	16V
C10	1-123-356-00	ELECT	10MF	20%	16V
C11	1-126-101-11	ELECT	100MF	20%	10V
C12	1-124-472-11	ELECT	470MF	20%	10V
C13	1-162-851-11	CERAMIC	0.1MF	20%	16V
C14	1-123-330-00	ELECT	22MF	20%	16V
C15	1-123-379-00	ELECT	0.47MF	20%	50V
C16	1-161-056-00	CERAMIC	0.027MF	10%	25V
C17	1-123-356-00	ELECT	10MF	20%	16V
C18	1-123-369-00	ELECT	4.7MF	20%	50V
C19	1-102-945-00	(AEP)...CERAMIC	8PF	0.5PF	50V
C19	1-102-947-00	(IT)....CERAMIC	10PF	0.5PF	50V
C20	1-102-961-00	CERAMIC	27PF	5%	50V
C21	1-102-962-00	CERAMIC	30PF	5%	50V
C22	1-123-379-00	ELECT	0.47MF	20%	50V
C23	1-123-379-00	ELECT	0.47MF	20%	50V
C24	1-123-330-00	ELECT	22MF	20%	16V
C25	1-101-004-00	CERAMIC	0.01MF		50V
C27	1-102-958-00	CERAMIC	20PF	5%	50V
C28	1-102-962-00	CERAMIC	30PF	5%	50V
C29	1-101-004-00	CERAMIC	0.01MF		50V
C30	1-101-004-00	CERAMIC	0.01MF		50V
C31	1-162-851-11	CERAMIC	0.1MF	20%	16V
C32	1-102-973-00	CERAMIC	100PF	5%	50V
C33	1-101-004-00	CERAMIC	0.01MF		50V
C34	1-123-379-00	ELECT	0.47MF	20%	50V
C35	1-126-101-11	ELECT	100MF	20%	10V
C36	1-102-936-00	CERAMIC	3PF	0.25PF	50V
CF1	1-567-538-71	FILTER, CERAMIC			
CF2	1-577-072-11	FILTER, CERAMIC			
CT1-4, CV1	1-151-614-11	CAP, VARIABLE			
D1	8-719-911-19	DIODE 1SS119			
D2	8-719-911-19	DIODE 1SS119			
D3	8-719-200-02	DIODE 10E2			
D4	8-719-911-19	DIODE 1SS119			
D5	8-719-911-19	DIODE 1SS119			
D6	1-808-344-11	DIODE SL-1042-79T			
D7	8-719-911-19	DIODE 1SS119			
D8	8-719-911-19	DIODE 1SS119			
IC1	8-759-821-46	IC LM8560N			
IC2	8-752-035-29	IC CXA1019S			
L3	1-406-150-11	COIL, MW OSC			
L4	*1-405-962-00	(AEP)...COIL, FM OSC			
L4	1-459-815-11	(IT)....COIL (WITH CORE), FM OSC			
L5	*1-422-291-11	COIL, AIR-CORE (FM RF)			
L6	*1-422-291-11	COIL, AIR-CORE (FM RF)			
L7	1-402-405-11	ANTENNA, FERRITE-ROD (MW)			
Q1	8-729-119-76	TRANSISTOR 2SA1175-HFE			
Q2	8-729-100-13	TRANSISTOR 2SC2001-K2			
R4	1-247-880-11	CARBON	110K	5%	1/4W
R5	1-249-398-11	CARBON	27	5%	1/4W
R6	1-249-441-11	CARBON	100K	5%	1/4W
R7	1-249-439-11	CARBON	68K	5%	1/4W
R8	1-249-435-11	CARBON	33K	5%	1/4W
R9	1-249-441-11	CARBON	100K	5%	1/4W
R10	1-249-413-11	CARBON	470	5%	1/4W
R11	1-249-423-11	(AEP)...CARBON	3.3K	5%	1/4W
R11	1-249-429-11	(IT)....CARBON	10K	5%	1/4W
R12	1-249-417-11	CARBON	1K	5%	1/4W
R13	1-249-421-11	CARBON	2.2K	5%	1/4W
R14	1-249-417-11	CARBON	1K	5%	1/4W
R15	1-249-428-11	CARBON	8.2K	5%	1/4W
R16	1-249-417-11	CARBON	1K	5%	1/4W
R17	1-249-417-11	CARBON	1K	5%	1/4W
R18	1-249-441-11	CARBON	100K	5%	1/4W
RV1	1-228-790-00	RES, VAR, CARBON 50K (VOL)			
S1	1-572-023-11	SWITCH, SLIDE (FUNCTION)			
S2	1-552-370-31	SWITCH, SLIDE (BAND)			
S3	1-553-856-00	SWITCH, KEY BOARD (REPEAT ALARM/SLEEP OFF)			
S4	1-553-856-00	SWITCH, KEY BOARD (SLEEP)			
S5	1-553-856-00	SWITCH, KEY BOARD (CLOCK)			
S6	1-553-856-00	SWITCH, KEY BOARD (TIME SET-H)			
S7	1-553-856-00	SWITCH, KEY BOARD (TIME SET-M)			
S8	1-553-856-00	SWITCH, KEY BOARD (ALARM)			
SP1	1-503-082-00	SPEAKER			
T1	⚠1-449-940-11	TRANSFORMER, POWER			
T2	1-404-790-11	TRANSFORMER, IF (AM)			

ACCESSORY & PACKING MATERIAL

3-751-271-41	(AEP).....MANUAL, INSTRUCTION (ENGLISH,FRENCH,GERMAN,DUTCH,PORTUGUESE,SPANISH)
3-751-271-51	(AEP,IT)...MANUAL, INSTRUCTION (ENGLISH,SPANISH,ITALIAN,SWEDISH)
*3-902-428-01	INDIVIDUAL CARTON
*3-902-464-01	CUSHION

9-955-600-21

Sony Corporation
Audio Group

English
90C0644-1
Printed in Japan
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